

## Effective Dates for Phase 3 CaRFG Limits

Phase 3 regulations became effective on December 31, 2003. Prior to that date, the Phase 2 regulations were in effect. The following summary lists significant transition dates into Phase 3 gasoline.

### 12/31/03 Production and Import Facility Limits:

All of the Phase 3 CaRFG standards become applicable to gasoline being sold supplied from production or import facilities. (Sec. 2261(b)(1)(B)). (See table from Sec. 2262.) The standards include stringent "refinery limits" that can be met using the Phase 3 CaRFG Predictive Model, less stringent "cap limits" for each regulated property, and a ban on the use of MTBE and other oxygenates other than ethanol in producing gasoline.

Table from Sec. 2262: The California Reformulated Gasoline Phase 2 and Phase 3 Standards

Property	Flat Limits		Averaging Limits		Cap Limits	
	CaRFG Phase 2	<b>CaRFG Phase 3</b>	CaRFG Phase 2	<b>CaRFG Phase 3</b>	CaRFG Phase 2	<b>CaRFG Phase 3</b>
Reid Vapor Pressure <sup>1</sup> (pounds per square inch)	7.00	<b>7.00 or 6.90<sup>2</sup></b>	Not Applicable	<b>Not Applicable</b>	7.00 <sup>3</sup>	<b>6.40 -7.20</b>
Sulfur Content (parts per million by weight)	40	<b>20</b>	30	<b>15</b>	80	<b>60<sup>4</sup></b>
						30 <sup>4</sup>
Benzene Content (percent by volume)	1.00	<b>0.80</b>	0.80	<b>0.70</b>	1.20	<b>1.10</b>
Aromatics Content (percent by volume)	25.0	<b>25.0</b>	22.0	<b>22.0</b>	30.0 <sup>3</sup>	<b>35.0</b>
Olefins Content (percent by volume)	6.0	<b>6.0</b>	4.0	<b>4.0</b>	10.0	<b>10.0</b>
T50 (degrees Fahrenheit)	210	<b>213</b>	200	<b>203</b>	220	<b>220</b>
T90 (degrees Fahrenheit)	300	<b>305</b>	290 <sup>5</sup>	<b>295</b>	330	<b>330</b>
Oxygen Content (percent by weight)	1.8 - 2.2	<b>1.8 - 2.2</b>	Not Applicable	<b>Not Applicable</b>	1.8 <sup>6</sup> - 3.5	<b>1.8<sup>6</sup>-3.5<sup>7</sup></b>
					0 <sup>6</sup> - 3.5	<b>0<sup>6</sup> - 3.5<sup>7</sup></b>
Methyl tertiary-butyl ether (MTBE) and oxygenates other than ethanol	Not Applicable	<b>Prohibited as provided in § 2262.6</b>	Not Applicable	<b>Not Applicable</b>	Not Applicable	<b>Prohibited as provided in § 2262.6</b>

<sup>1</sup> The Reid vapor pressure (RVP) standards apply only during the warmer weather months identified in section 2262.4.

<sup>2</sup> The 6.90 pounds per square inch (psi) flat limit applies only when a producer or importer is using the evaporative emissions model element of the CaRFG Phase 3 Predictive Model, in which case all predictions for evaporative emissions increases or decreases made using the evaporative emissions model are made relative to 6.90 psi and the gasoline may not exceed the maximum RVP cap limit of 7.2 psi. Where the evaporative emissions model element of the CaRFG Phase 3 Predictive Model is not used, the RVP of gasoline sold or supplied from the production or import facility may not exceed 7.0 psi.

<sup>3</sup> For sales, supplies, or offers of California gasoline downstream of the production or import facility starting on the date on which early compliance with the CaRFG Phase 3 standards is permitted by the executive officer under section 2261(b)(3), the CaRFG Phase 2 cap limits for Reid vapor pressure and aromatics content shall be 7.20 psi and 35.0 percent by volume respectively.

<sup>4</sup> The CaRFG Phase 3 sulfur content cap limits of 60 and 30 parts per million are phased in starting December 31, 2003, and December 31, 2005, respectively, in accordance with section 2261(b)(1)(A).

<sup>5</sup> Designated alternative limit may not exceed 310.

<sup>6</sup> The 1.8 percent by weight minimum oxygen content cap only applies during specified winter months in the areas identified in section 2262.5(a).

<sup>7</sup> If the gasoline contains more than 3.5 percent by weight oxygen but no more than 10 volume percent ethanol, the maximum oxygen content cap is 3.7 percent by weight.

In addition,

Must not sell or supply gasoline which has been produced with the use of neat MTBE.

(Sec. 2262.6(a)(1))

Must not sell or supply gasoline which has been produced with the use of an oxygenate other than ETOH. (Sec. 2262.6(c)(1))

MTBE	0.6 v%	(Sec. 2262.6(a)(2) and (b)(1)(A))
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O2 for all other oxygenates	0.10 w%	(Sec. 2262.6(c)(2) and (c)(5)(A))
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Limits that are applicable throughout the gasoline distribution system:

The Phase 3 CaRFG cap limits that are equal to or less stringent than the Phase 2 CaRFG cap limits for the same property become applicable throughout the gasoline distribution system; they are shown below. (Sec. 2261(b)(1)(A)) The remaining Phase 2 CaRFG cap limits continue to apply downstream from the refinery or import facility.

Aromatics	35.0 v%	(Sec. 2262)
Olefins	10.0 v%	(Sec. 2262)
T50	220	(Sec. 2262)
T90	330	(Sec. 2262)
Winter Oxygen	1.8-3.5 v%	(Sec. 2262)
Summer Oxygen	0-3.5 v%	(Sec. 2262)
Summer RVP	6.40-7.20 psi	(Sec. 2262)

2/14/04

Terminal Limits:

The Phase 3 CaRFG cap limits that are more stringent than the Phase 2 CaRFG cap limits become applicable at terminals and to deliveries to service stations and bulk purchaser-consumer facilities (except for gasoline coming from a bulk plant). (Secs. 2261(b)(1)(A)3., 2262.6(b)(1)(B), and 2262.6(c)(5)(B)) These cap limits are:

Benzene	1.10 v%	(Sec. 2261(b)(1)(A)(2))
Sulfur	60 ppm	(Sec. 2262(b)(1)(A)(2))
MTBE	0.6 v%	(Sec. 2262.6(a)(2) and (b)(1)(B))
O <sub>2</sub> for all other oxygenates	0.10 w%	(Sec. 2262.6(c)(2) and (c)(5)(B))

3/31/04

Service Station Limits:

The Phase 3 CaRFG cap limits that are more stringent than the Phase 2 CaRFG cap limits become applicable throughout the gasoline distribution system, including to gasoline being sold at service stations, except for transitioning low-throughput stations. (Secs. 2261(b)(1)(A)3., 2262.6(b)(1)(C), and 2262.6(c)(5)(C))

Benzene	1.10 v%	(Sec. 2261(b)(1)(A)(2))
Sulfur	60 ppm	(Sec. 2262(b)(1)(A)(2))
MTBE	0.6 v%	(Sec. 2262.6(a)(2) and (b)(1)(B))
O2 for all other oxygenates	0.10 w%	(Sec. 2262.6(c)(6))

4/1/04	<u>Production and Import Facility Limits:</u> In 2004 only, the RVP season for production and import facilities begins one month later (instead of 3/1/04) than normal in the South Coast, San Diego, Mojave, and Salton Sea Air Basins and Ventura County for refiners and importers that did not elect to have the one-month postponement apply in March 2003 rather than March 2004. (Sec. 2262.4(b)(2)(A))		
5/1/04	<u>Terminal and Service Station Limits:</u> The RVP season for terminals and service stations begins one month later (instead of 4/1/04) than normal for the South Coast, San Diego, Mojave, and Salton Sea Air Basins and Ventura County. (Sec. 2262.4(a)(2)(A))		
7/1/04	<u>Production and Import Facility Limits:</u> MTBE 0.3 v% (Sec. 2262.6(a)(2) and (b)(2)(A))		
8/15/04	<u>Terminal Limits:</u> MTBE 0.3 v% (Sec. 2262.6(b)(2)(B))		
10/1/04	<u>Service Station Limits:</u> MTBE 0.3 v% (Sec. 2262.6(b)(2)(C)), except for transitioning low-throughput stations (Sec. 2262.6(b)(3))		
12/31/05	<u>Production and Import Facility Limits:</u> Sulfur 30 ppm (Sec. 2261(b)(1)(A)1.) MTBE 0.15 v% (Sec. 2262.6(a)(2) and (b)(1)(A))		
2/14/06	<u>Terminals Limit:</u> Sulfur 30 ppm (Sec. 2261(b)(1)(A)2.) MTBE 0.15 v% (Sec. 2262.6(b)(1)(B))		
3/31/06	<u>Service Station Limits:</u> Sulfur 30 ppm (Sec. 2261(b)(1)(A)3.), except for transitioning low-throughput stations (Sec. 2261(b)(2)) MTBE 0.15 v% (Sec. 2262.6(b)(1)(C)), except for transitioning low-throughput stations (Sec. 2262.6(b)(3))		
7/1/07	<u>Production and Import Facility Limits:</u> MTBE 0.05 v% (Sec. 2262.6(a)(2) and (b)(2)(A))		
8/15/07	<u>Terminal Limits:</u> MTBE 0.05 v% (Sec. 2262.6(b)(2)(B))		
10/1/07	<u>Service Station Limits:</u> MTBE 0.05 v% (Sec. 2262.6(b)(2)(C)), except for transitioning low-throughput stations (Sec. 2262.6(b)(3))		

Note: The information in this table reflects the regulations effective as of May 1, 2003.